

Mountaintop Mining/Valley Fill Environmental Impact Statement Technical Study

WORK PLAN APPROACH FOR WETLANDS

July 27, 1999

I. Problem Statement

A typical mountain-top mining/valley fill (MTM/VF) operation in the Appalachian coalfields removes overburden and interburden material to facilitate the extraction of low-sulfur coal seams, and has often required the placement of excess spoil into valleys containing first and second order streams. The impact to wetland resources resulting from these operations is largely unknown, and until recently, there has been little to no emphasis under the Clean Water Act on assessing or mitigating the effects of these operations on those resources.

Wetland resources are of significant importance in protecting and improving water quality. They filter pollutants from the water column, provide habitat, and provide a food source for many aquatic, avian, and terrestrial species. Wetlands can also provide significant sediment trapping and flood control benefits. As these resources are often considered to be transition areas between aquatic and terrestrial environs, this work plan will augment the activities of the **Streams, Fisheries Survey** and **Terrestrial Habitat** Teams, whose work is covered in their respective work plans. To be successful, this work plan will require industry cooperation to survey sites, assess opportunities, and initiate pilot projects.

II. Goals and Questions to be Addressed by This Work Plan

The steering committee for the Environmental Impact Statement (EIS) has adopted goals and questions to be addressed from several different perspectives: environmental, regulatory, and public service. This work plan, in conjunction with the other work plans and technical symposia that will be conducted during the preparation of the EIS, will attempt to address the following goals as adopted by the committee:

- C To determine the impact on environmental resources (including aquatic resources) from the size and location of excess spoil disposal in valley fills associated with mountaintop mining operations,
- C To show... how such mining operations might be carried out in a way that minimizes adverse

impacts to... environmental resources, and

- C To examine how to improve environmental assessment and design of individual mining projects.

Similarly, this work plan will attempt to answer the following questions posed by the EIS steering committee:

- C After evaluating the combined effects of mining and other surface disturbing activities, and the offsetting effects of reclamation and compensatory mitigation, what are the expected net cumulative effects of existing, ongoing and all viable future mountaintop mining operations on the aquatic environments of the Appalachian coalfields region? What impacts will the future projects have on environmental resources, including waters of the U.S. and fish and wildlife?
- C What environmental analyses should be required before a mining plan is submitted? During mining? After mining and reclamation end?
- C To what degree are the drainage control measures being established on fills able to replace aquatic habitats that existed prior to construction of the fill, and can designs be modified to further enhance or accomplish this?
- C Regarding the effectiveness of existing forms of mitigation associated with valley fills in replacing or providing substitute resources, can existing forms of mitigation be modified to further enhance or accomplish this?

III. EIS Team Members and Experts Consulted

Point of Contact: William Hoffman, EPA Region III, mail code 3ES30, 1650 Arch Street, Philadelphia, PA 19103-2029, (215) 814-2995, hoffman.william@epa.gov

EPA Wheeling Office: Gary Bryant

EPA Region III: David Rider, Peter Stokely

FWS: Cynthia Tibbott

WVDEP: Ken Politan

Canaan Valley Institute: John (Randy) Pomponio

Experts Consulted: Stephen Handel, Rutgers University

IV. Evaluation of Current Wetland Assessment Practices

MTM/VF operations eliminate surface waters and riparian zones existing within fill areas. These areas may or may not contain wetland resources. As these activities have been regulated historically under the Nationwide permit program administered by the US Army Corps of Engineers pursuant to Section 404 of the Clean Water Act, the detailed assessment of wetland losses and/or reestablishment resulting from these activities has not been performed. It has been reported that wetland communities have become established at reclaimed mine sites, often within sediment retaining structures, or in other ponded areas on the mined sites. The extent of these areas, or the functions they are providing, however, is uncertain. With the prospect that these activities may be increasingly regulated under Section 404, site specific assessment and restoration protocols are needed.

V. Wetland Impact/Restoration Assessment

A. Aerial Photography/Field Review of Selected Mining Sites

During the performance of the biological and stream chemistry field work described in the **Streams** work plan, five to seven watersheds will be examined which contain MTM/VF sites that have been closed and/or released from their reclamation bonding requirements. Further, as part of the **Landscape Ecology** work plan, aerial photography will be acquired which will cover the entire coal seam footprint, including each of these watersheds. This aerial photography can be utilized to assess the extent and nature of wetland resources that typically exist in these watersheds, and the impacts of MTM/VF operations, through a paired watershed assessment approach. Using this approach, the extent to which wetland resources typically exist in unmined headwater basins will be evaluated and compared to similar basins where mined sites have been reclaimed. Field teams will then be sent out to perform functional assessments (water quality, wildlife, and sediment trapping) at the wetland areas identified on paired mined and unmined sites. The EPW technique developed by Environmental Concern, Inc. will be utilized by the field teams to perform these field assessments. While direct pre- and post-mining functional comparisons will not be possible, a paired comparison of pre- and post-mining wetland acreages and functions can be made. From this assessment, which will be performed in the Fall of 1999 or the Spring of 2000, future wetland creation opportunities on reclaimed sites may be evaluated.

B. Pilot projects

Similar to the development of pilot projects that would be undertaken pursuant to the **Aquatic Ecosystem Enhancement** work plan, cooperating mining companies would be requested to consider undertaking **wetland pilot projects** on their lands. These pilot projects could fall into three categories: (1) enhancement of existing wetland areas on previously mined sites; (2) wetland creation projects in existing drainage ditches and/or ponds if suitable candidates are found; and (3) new wetland creation pilot projects designed to replace functions that have been determined to exist at the

pre-pilot stage e.g. during design of mining projects and valley fills.

Most, if not all, of the pilot projects could not be completed within the time frame of the programmatic EIS. Thus, they would be contributing to longer-term research. It is intended, however, to incorporate the findings of the initial field studies into the EIS.

VI. Projected Study Costs:

The major cost associated with this work plan is related to the acquisition and interpretation of aerial photography, which will be funded under the **Landscape Ecology** work plan. Field work is proposed to be conducted by agency field crews after this aerial photography has been acquired and interpreted. This work plan also does not include the costs of implementing pilot projects, as it is assumed that mining companies will perform these tasks. Provided the Landscape Ecology work plan is funded, no additional funds will be necessary for the completion of this work plan.

For further information regarding this work plan, please contact Mr. William J. Hoffman at (215) 814-2995, or at hoffman.william@epa.gov.